Test/Interval	Conditions	Standard Deviation/Error	Equation
1 Proportion z-interval	1- SRS 2- $n\hat{p}\ and\ n\hat{q} \geq 10$ 3- Pop $\geq 10n$	$\sqrt{\frac{\hat{p}\hat{q}}{n}}$	$\hat{p} \pm Z^* \sqrt{\frac{\hat{p}\hat{q}}{n}} = (a, b)$
1 Proportion z-test	1- SRS 2- $np\ and\ nq \geq 10$ 3- Pop $\geq 10n$	$\sqrt{\frac{pq}{n}}$	Ho: p = % Ha: p <, >, ≠% $Z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}}$
2 Proportion z-interval	1- 2 independent SRS 2- $n_1\hat{p}_1$ $n_1\hat{q}_1$ $n_2\hat{p}_2 \geq 10$ $n_2\hat{q}_2$ 3- $Pop_1 \geq 10n_1$ $Pop_2 \geq 10n_2$	$\sqrt{\frac{\hat{p}_1\hat{q}_1}{n_1} + \frac{\hat{p}_2\hat{q}_2}{n_2}}$	$(\hat{p}_1 - \hat{p}_2) \pm Z^* \sqrt{\frac{\hat{p}_1\hat{q}_1}{n_1} + \frac{\hat{p}_2\hat{q}_2}{n_2}}$
2 Proportion z-test	1- 2 independent SRS 2- $n_1\hat{p}_1$ $n_1\hat{q}_1$ $n_2\hat{p}_2 \geq 10$ $n_2\hat{q}_2$ 3- $Pop_1 \geq 10n_1$ $Pop_2 \geq 10n_2$	$\sqrt{\frac{\hat{p}\hat{q}}{n_1} + \frac{\hat{p}\hat{q}}{n_2}}$ $\hat{p} = \frac{X_1 + X_2}{n_2 + n_2}$	Ho: $p_1 = p_2$ Ha: p_1 <, >, ≠ p_2 $Z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\frac{\hat{p}\hat{q}}{n_1} + \frac{\hat{p}\hat{q}}{n_2}}}$
1 Sample t-interval	1- SRS 2- Pop $\geq 10n$ 3- Normal population Or n $\geq$ 30	$\left(\frac{s}{\sqrt{n}}\right)$	$\bar{x} \pm t^* \left(\frac{s}{\sqrt{n}}\right)$
1 Sample t-test	1- SRS 2- Pop $\geq 10n$ 3- Normal population Or n $\geq$ 30	$\left(\frac{s}{\sqrt{n}}\right)$	Ho: μ = # Ha: μ >, <, ≠ # $t = \frac{\bar{x} - \mu}{s/\sqrt{n}}$

2 Sample t-interval	1- 2 independent SRS 2- $Pop_1 \geq 10n_1$ $Pop_2 \geq 10n_2$ 3 2 Normal populations Or n_1 and $n_2 \geq 30$	$\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}$	$(\bar{x}_1-\bar{x}_2) \pm t^*\left(\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}\right)$
2 Sample t-test	1- 2 independent SRS 2- $Pop_1 \geq 10n_1$ $Pop_2 \geq 10n_2$ 3- 2 Normal populations Or n_1 and $n_2 \geq 30$	$\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}$	Ho: $\mu 1 = \mu 2$ $t=\frac{\bar{x}_1-\bar{x}_2}{\sqrt{\frac{s_1^2}{n_1}+\frac{s_2^2}{n_2}}}$
Paired t-interval	1- Paired Data 2- SRS 3- Pop of diff. $\geq 10n_d$ 4- Normal pop of diff. Or $n_d \geq 30$	$\frac{s_d}{\sqrt{n_d}}$	$\bar{x}_d \pm t^*\left(\frac{s_d}{\sqrt{n_d}}\right)$
Paired t-test	1- Paired Data 2- SRS 3- Pop of diff. $\geq 10n_d$ 4- Normal pop of diff. Or $n_d \geq 30$	$\frac{s_d}{\sqrt{n_d}}$	Ho: $\mu_d = 0$ $t=\frac{\bar{x}_d-\mu_d}{\frac{s_d}{\sqrt{n_d}}}$
Chi-Square test	1- Categorical data 2- SRS 3- All expected counts ≥ 5	NONE	$\chi^2=\sum\frac{(obs-exp)^2}{exp}$
Test for Linear Regression	1- SRS 2- Linear data 3- Independence 4- Normal residuals 5- Equal variance	SE_b	Ho: $\beta = 0$ $t=\frac{b_1}{SE_b}$